## REMARKS

The present amendment is filed in response to the Office Action dated September 22, 2009, finally rejecting pending claims 1-6, 8-15, 17-27, and 31-32.

### I. Claim Amendment:

In order to emphasize the patentable distinctions of applicant's invention over the prior art, claims 1, 27, and 32 have been amended to recite a non-woven mat facer having a surface texture, and to call for the surface of gypsum or hydraulic set board faced with such facer to be sufficiently smooth that the board is directly paintable, with the surface texture not remaining perceptible after the face is painted.

Support for the amendment of claims 1, 27, and 32 is provided by the specification; particularly at page 8, lines 5-14. Consequently, no new matter has been added.

For the sake of clarity, each of claims 23-25 has been amended to replace the expression "gypsum core" with "gypsum layer," for which base claim 1 provides express antecedent basis. Support for the amendment of claims 23-25 is provided by the specification; particularly at page 1, lines 13-14 and lines 1-2 of the abstract. Consequently, no new matter has been added.

**Discussion:**

Applicant' invention, as recited by claims 1-6, 8-15, 17-27, and 31-32, as amended, is directed to a paintable gypsum or hydraulic board. In various embodiments, the board exhibits a combination of desirable structural and functional features that render it fire resistant and paintable or otherwise able to be given an aesthetically pleasing finish after installation with a minimum of surface preparation required. The mat has a high permeability, permitting easy extraction of excess water ordinarily present during slurry-based manufacture of gypsum or other hydraulic set board. Surprisingly and unexpectedly, gypsum board faced in accordance with the invention with the present nonwoven glass fiber mat, wherein the fibers consist essentially of chopped glass fibers having an average fiber diameter ranging from about 9.5 to 12.5 μm and an average fiber length ranging from about 6 to 12 mm, has a smoother surface than boards made with mats employing either larger or smaller diameter fibers. The smoothness of the surface permits the board to be painted directly, without the need for a skim coat of plaster, that heretofore has been required in order for the underlying surface texture of the mat not to be perceived after painting. Elimination of that skim coat markedly improves the efficiency of installation and ultimate finishing of the board, as required for most construction projects.

It is especially surprising and significant that the aforementioned 9.5 to 12.5 μm fibers result in smoother board than that obtained with fibers having a smaller diameter. It is likewise surprising and unexpected that a gypsum board having a facer wherein the average

glass fiber diameter is 9.5 – 12.5 μm and the average fiber length is 6 – 12 mm is smoother than board faced with mat having the same diameter but fiber length of 19 mm (3/4").

## II. Rejection under 35 USC §112, second paragraph:

Claims 1-6, 8-15, 17-27, 31, and 32 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner has alleged that the scope of claims 1-6, 8-15, 17-27, 31, and 32 is unclear, inasmuch as the specification does not provide objective and/or quantitative characteristics which describe a "smoothness that is sufficient to permit the board to be directly paintable." To the contrary, applicant points to the above-quoted recitations at page 4, lines 6-9, 15-18, and 20-27, which indicate the deficiency of prior art fiber-faced construction boards, in which "defects and the underlying fibrous texture remain perceptible and aesthetically unappealing" even after painting, and the contrasting behavior exhibited by the present mat and board. Accordingly, it is submitted that the skilled person would recognize that the requisite smoothness and paintability are discernable by observing whether or not the surface is smooth enough that the underlying fibrous texture of the mat facer is not readily perceived after gypsum board employing that facer is painted so as to render the surface aesthetically objectionable.

Nevertheless, for the sake of clarity, claims 1, 27, and 32 have been amended to expressly call for the smoothness of the mat to be such that the underlying mat surface texture does not remain perceptible after painting.

With respect to claims 23-25, the Examiner has alleged that the term "said gypsum core" lacks antecedent basis. Claim 1, from which claims 23-25 depend, calls for a gypsum "layer." It is respectfully submitted that a skilled person would recognize the terms "layer" and "core" as used respectively in these claims as referring to the same structure. However, for the sake of clarity, claims 23-25 have been amended to recite a "gypsum layer," for which claim 1 provides express antecedent basis.

It is applicant's understanding that claims 2-6, 8-15, 17-26, and 31 were rejected merely as inheriting the alleged lack of clarity of base claims 1 and 27, but are not rejected under 35 USC 112, second paragraph on other grounds. Consequently, it is submitted that the foregoing amendment of base claims 1 and 27 cures the defect, if any, of claims 2-6, 8-15, 17-26, and 31.

Accordingly, reconsideration of the rejection of claims 1-6, 8-15, 17-27, 31, and 32 under 35 USC 112, second paragraph, as being indefinite, is respectfully requested.

## III. Rejections under 35 USC §103(a):

Claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32 stand rejected under 35 USC 103(a) as being unpatentable over US Patent 5,772,846 to Jaffee ("Jaffee '846"), which provides a

thermoformable nonwoven fibrous mat having properties said to make it particularly suited for a facer on insulating gypsum board.

Applicant respectfully submits that Jaffee '846 fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a surface that smooth enough to be directly paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material. Absent this recognition, a skilled artisan would not be led to the present facer materials for gypsum or other hydraulic set board.

The Examiner has admitted that Jaffee '846 fails to teach the particular ranges of average fiber diameter between 9.5 and 12.5 μm and the average fiber length between 6 and 12 mm, as required by applicant's claims. Applicant respectfully submits that it is not proper to combine individual teachings "cherry-picked" from the Jaffee '846 reference. Specifically, applicant's claims require a particular fiber diameter range and a particular length range in combination.

Applicant continues to maintain that it is this combination that gives rise to surprising and unexpected results, evidenced both in comparative examples set forth both in the original specification and in two Declarations Under 37 CFR 1.132 by Alan M. Jaffee, the first being dated April 26, 2006 and entered May 3, 2006[1] and the second entered October 24, 2006.

[1] It is agreed that there are not separate Declarations dated April 26, 2006 and May 3, 2006. The cited dates refer to a single document, with April 26, 2006 being the date on which Mr. Jaffee executed the document , and May 3, 2006 being the date on which the declaration was received by the USPTO and entered in the present application file. For clarity, this declaration is denoted hereinafter "the May 3 Declaration." It is further noted that a separate Declaration by Mr. Jaffee is also of record in the present application, having been entered on October 24, 2006.

The Examiner has pointed to certain disclosures in Jaffee '846 regarding fiber diameter and length, and has relied on *In re Aller*, 220 F.2d 454, 456; 105 USPQ 233, 235 (CCPA 1955) for the proposition that optimization of the fiber diameter and length is not inventive. He particularly states that "one would have been motivated to optimize the fiber diameter, length, proportion of glass fibers and basis weight in order to create a composite with the desired properties such as flexibility and strength while minimizing skin irritation during installation." Office Action at p. 6.

Applicant respectfully maintains that reliance on *Aller* in this instance is misplaced. In *Aller*, the court elucidated the concept of criticality in the context of ranges:

> Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. Such ranges are termed 'critical' ranges, and the applicant has the burden of proving such criticality.
> [*In re Aller*, 220 F.2d 454, 456; 105 USPQ 233, 235, (CCPA 1955, citations omitted)]

To begin, nothing in Jaffee '846 pertains in any way to smoothness, so there is no indication which, if any, of the multiple variables of fiber characteristics and other mat parameters ought to be varied to effect the purported optimization. Nothing instructs the artisan how to "dial up" smoothness. Even further, applicants' selection of a particular fiber constituents cannot rightly be regarded as a mere improvement in degree, because even the possibility smoothness sufficient to permit direct paintability and result in imperceptible mat structure was not a property ever contemplated for mat-faced gypsum board in the prior art, or by Jaffee '846. On the other hand, the Examiner's own proffered motivation for carrying out

the optimization was to alter very different properties of the non-woven fiber mat. Thus, even if there were, *arguendo*, motivation to improve certain other properties, there is no basis for concluding that the resulting mat and board would exhibit improved smoothness.

More specifically, the Examiner has proffered a motivation for modifying (allegedly, "optimizing") the composition of Jaffee '846, namely to provide improved flexibility and strength and minimized skin irritation. However, he has not articulated any basis that would establish that applicants' choice of fiber dimensions would in fact accomplish these objectives. To the contrary, as set forth in the specification at page 8, lines 2-3, and in the May 3 Jaffee Declaration at ¶17, a skilled artisan seeking smoothness would have been led to smaller diameter fibers, and not to the intermediate diameter fibers shown herein to provide improved smoothness. Thus, an artisan motivated as the Examiner purports, would not be led to applicants' composition.

Furthermore, *Aller* turned on the selection of individual workable ranges. In the present instance, applicants faced a much more complicated selection process that involved plural, interacting numerical selections required to achieve the claimed smoothness.

Therefore, applicants maintain that the particular fiber dimensions recited by claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32 are not disclosed or suggested by Jaffee '846 .

The Examiner has indicated that the evidence presented in the Jaffee Declarations of May 3 and October 24 is not persuasive. He has particularly disputed applicant's arguments that: (i) Jaffee's qualifications are sufficient to establish him as a person of at least ordinary

skill in the pertinent art and (ii) the May 3 declaration constitutes objective evidence. Applicant traverses both contentions.

The Examiner has provided no basis for disputing that Declarant Jaffee possesses the education and professional experience set forth at ¶1 of the May 3 Declaration, including his bachelor's and master's degrees in Chemical Engineering, his over two decades of work experience in the chemical industry, and his experience in the manufacture and application of glass fibers and non-woven products made therewith. Applicant maintains these indicia are clearly and directly pertinent to the subject matter of the present invention. Significantly, applicant is unable to locate any basis on which the Examiner has established the level of ordinary skill in the art pertinent to the present application, as required under *Graham v. John Deere*, 383 U.S. 1, 17-18, 86 S. Ct. 684, 15 L. Ed. 2d 545, and reiterated in *KSR v. Teleflex*, 127 S. Ct. 1727; 167 L. Ed. 2d 705; 2007 U.S. LEXIS 4745; 75 U.S.L.W. 4289; 82 U.S.P.Q.2D (BNA) 1385. Absent evidence to the contrary, applicant maintains that Jaffee's Declaration must be regarded as being made by a person having at least ordinary skill.

Applicant likewise traverses the contention that the Jaffee May 3 Declaration does not constitute objective evidence. It is respectfully submitted that the BPAI Decision of January 29, 2009, on which the Examiner relies, nowhere characterizes the May 3 Declaration as failing to provide objective evidence, let alone in the portion of the decision quoted on page 17 of the present Office Action. The Examiner's position, to the contrary, mistakes the Board's position on persuasiveness for objectivity.

Applicant further traverses the BPAI's *sua sponte* position that Jaffee has not established that testing using camera images, software and visual observation is an art-recognized test or is reliable.

The Jaffee Declaration itself states that optical measurements using the system described at ¶¶11-12 provide a valid characterization permitting relative surface roughness to be determined, as delineated at ¶¶13 and 15. Mr. Jaffee validated the numerical technique by comparing it to visual determination (¶16). Applicant respectfully submits that the BPAI's opinion to the contrary is untenable, because it is not supported by any evidence of record that refutes Mr. Jaffee's position. Mr. Jaffee having been established as a person having ordinary skill, his opinion is entitled to evidentiary weight and must be considered. *In re Sullivan,* 498 F.3d 1345, 1353 (Fed. Cir. 2007).

As evidence, applicant first points to teaching of the specification that the present gypsum board "has an improved 'hand,' i.e., an improved subjective feel, and better accepts surface treatments because of its greater smoothness." Page 8, lines 5-8. Applicant's usage accords with a long history in the textile arts: usage of the term "hand" as referring to smoothness of fabric products or textiles is attested even by standard dictionaries. For example, *Merriam Webster's Third International Dictionary-Unabridged* (1993) includes the following pertinent definition of "hand" as "the feel of cloth or leather or tactile reaction to its textural qualities of smoothness, flexibility, softness <the warm, dry, luxurious hand of silk *Collier's Year Book*>." *Id.* at 1026.

The specification further contemplates both direct observation and instrument-based optical techniques for characterizing surface roughness. *See* page 4, line 12-18.

The technical literature contains numerous references that establishes usage of light scattering as a technique of measuring surface roughness. Some representative examples are submitted herewith.

The 1975 thesis of Tsalas was undertaken to consider the correlation between a standard contact measurement of roughness (the "Talysurf" method) and optical methods, as applied to paper. Page iii. Optical methods (the "RetroReflective Unit (RRU)") are described in detail in Section 2.3. Although the method employed in the Jaffee testing is much more sophisticated, owing to the availability of vastly improved imaging technology since 1975, Tsalas's conclusion, stated at the bottom of page 38, is indicative: "The results from both the T4 [Talysurf physical contact method] and the RRU methods appear to be compatible, to the extend that the results of the statistical analysis of the same surface by the two instruments give closely related values."

Li and Torrance describe extensive light-scattering measurements made to validate their mathematical models correlating surface roughness and light scattering. *See especially* Sections 3-4, pages 11-14. A white paper by Schmitt Industries entitled "Tech Overview, Effects of Surface Roughness" demonstrates the commercial use of light scattering methods for characterizing surface roughness.

The paper "An Optical Measuring System for the Surface Roughness of Glass Wool Papers" by Chen et al. is particularly pertinent, since it pertains directly to characterization of

glass wool papers. Attention is respectfully drawn to the measurement system shown in Figs. 1-2 and the conclusions on p. 224, which are submitted to reflect the understanding of skilled persons, in agreement with the conclusions drawn by Jaffee in the May 3 Declaration at ¶¶ 13 and 15.

Applicant further maintains that the BPAI decision evidences a misreading of the May 3 Declaration with respect to the meaning of the average intensity and standard error. As set forth at ¶12, each of the samples tested was illuminated at grazing incidence by the same light. Differences in the reported intensity for the different samples indicated the different amount of light intercepted by camera 5. The image acquired by camera 5 was divided into digitized pixels, so that it could be analyzed numerically. The reported intensity was determined by averaging the light intensity detected in each pixel, while the variability was determined by the standard error, calculated in a conventional way from the ratio of the standard deviation of the population of pixel intensities divided by the average intensity. Contrary to the impression seemingly set forth in the BPAI decision, the average intensity is not a variable controlled by the experimenter. Rather, the experimental observation of differences in the average intensity arises from actual variations in the reflectivity of the different samples under a given lighting condition, and thus from differences in surface roughness, as stated in ¶15 of the May 3 Declaration. The data of ¶14 show that either increasing (Samples 1 and 4) or decreasing (Sample 3) average fiber length from 12 mm increases the standard error. Likewise, either increasing or decreasing average fiber diameter from 11 μm also increases the standard error. Mr. Jaffee states that a skilled person would

understand the increase in standard error to reflect a rougher surface. It is respectfully submitted that the BPAI has substituted its own reading for that of Mr. Jaffee without warrant.

Applicant continues to maintain the position that the Examiner has not pointed to any species of gypsum board falling within the claimed ranges. This is assertion is predicated on the lack of any specific example of a gypsum board having a non-woven, glass fiber mat as a facer, with the fibers in the mat having an identified average fiber diameter and an average fiber length falling within the claim ranges of 9.5 to 12.5 μm and 6 to 12 mm, respectively, regardless of the smoothness of the board. Applicant respectfully maintains that the existence of prior art disclosing subject matter delineated by numerical ranges that overlap the claim ranges, but without actual example species falling within the claim ranges, creates at most a case of prima facie obviousness. MPEP 2144.05.

It is settled law that prima facie obviousness can be rebutted by a showing that unexpected properties are exhibited within a claimed range. MPEP 2144.05(III) and *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Applicant respectfully maintains that not only is the claimed mat smoother, but also the smoothness is sufficient to permit direct painting without additional surface preparation. It is submitted that this paintability is thus a difference in kind, not merely a difference in degree between gypsum board made with the mat disclosed by applicant and prior art, non-woven fiber-faced gypsum board.

Applicant further counters the Examiner's apparent view that the present claim merely represents the claiming of a new use, new function, or unknown property which is inherently

present in the prior art. As best understood by applicant, the Examiner is asserting that the claimed smoothness is an inherent property of prior art, fiber-faced gypsum boards.

It is respectfully submitted this argument is unavailing. It is settled law than an inherency argument must be grounded in certainty, not probability. As articulated by the Federal Circuit in *In re Anthony et al.*, 169 F.3d 743, 745; 49 U.S.P.Q.2D (BNA) 1949 (Fed. Cir. 1999):

> To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.' *Continental Can Co. v. Monsanto Co. 948 F.2d 1264, 1268, 20 U.S.P.Q.2D (BNA) 1746, 1749 (Fed. Cir. 1991).* 'Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' *Id. at 1269, 20 U.S.P.Q.2D (BNA) at 1749* (quoting *In re Oelrich, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981).*"

In the present instance, and as noted above, the Examiner has not pointed to any species of gypsum board falling within applicant's claimed ranges. Even if, *arguendo*, applicant's ranges are encompassed by broader disclosure in Jaffee '846 or another reference, the very comparative data set forth in the specification and Jaffee Declaration establish that at least some prior art gypsum boards falling within the broad Jaffee '846 disclosure fail to exhibit the requisite smoothness, thus negating any contention that such property is inherent, as would be required to sustain any rejection based on an inherency theory. Only in light of applicant's own disclosure, and contrary to conventional wisdom (*compare* the Jaffee

Declaration at ¶17) is the present smoothness property attained. It is submitted that the Examiner's argument that:

> the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention.
>
> [Page 7 of the Instant Office Action]

is unavailing, because the present structure is not substantially similar, given the narrow range of fiber diameter and length recited by the claims, which ranges are not taught by the prior art, including Jaffee '846, and the lack of any species of the prior art falling within these ranges.

Still further, applicant traverses the examiner's position regarding the combination of old elements. Although he makes no attribution, the Examiner apparently is apparently quoting verbatim small portions of certain prior court decisions cited in *KSR v. Teleflex*. The Examiner has stated that:

> ...a patent for a combination, which only unites old elements with no change in their respective functions, obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men. When a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.
>
> [Office Action at 19-20.]

Applicant respectfully submits that the foregoing Examiner's reasoning in applying these excerpts from *KSR* in the present matter is flawed. First, applicant's argument is directed to the combination of a particular average fiber diameter and a particular average

fiber length, not a combination of separate mechanical elements or chemical substances, to which the case law quotations underlying the Examiner's statement pertain. Second, the Examiner apparently regards the fiber diameter and the fiber length as each performing a known function, but has not stated what those functions are. Absent identification of those functions, there is no logical warrant for the conclusory implication that the fiber diameter and the fiber length play the same unidentified functions in applicant's mat and gypsum board, thereby predicating an obviousness rejection.

In view of the amendment of claims 4-6 and 31 and the foregoing remarks, it is submitted that claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32, as amended, are novel and unobvious over Jaffee '846.

Accordingly, reconsideration of the rejection of amended claims 1-6, 8-15, 17-19, 21-24, 26-27, and 31-32 under 35 USC 103(a) as being unpatentable over Jaffee '846 is respectfully requested.

Claim 13 was rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of USP 6,187,697 to Jaffee ("Jaffee '697"), which discloses a multiple layer fibrous nonwoven mat having a body portion and a surface portion. The body portion is said to comprise a mass of nonwoven fibers, with or without particles, bonded together with a resin binder; the surface portion contains fibers and/or particles bonded together with the same said resin binder, the surface portion being substantially-different than the major or body portion of the nonwoven mat. The body portion makes up a major portion of the basis weight (weight

per unit area) of the mat while the surface portion makes up a minor portion of the basis weight of the mat. The fibers used for the surface portion are preferably shorter than one-quarter inch and longer than 100 microns.

The Examiner states the following with respect to Jaffee '697:

> ...'697 teaches a substantially similar facer suitable for use with gypsum board, the facer comprising a non-woven glass fiber web bonded with a resinous binder, the glass fibers having an exemplary diameter of 10μm and having an exemplary length of about 0.25 inches, wherein the binder comprises urea formaldehyde or melamine formaldehyde..."
>
> [Office Action at p. 14, citations omitted.]

Applicant respectfully traverses this contention, as nowhere does Jaffee '697 teach these features in combination. Instead, applicant respectfully submits that the Examiner has conflated separate disclosures. For example, at col. 2, lines 29-31, Jaffee '697 discloses fibers for the surface portion of his two-layer structure in which the fiber length is preferably 0.25 inches or less. Col. 8, lines 57-60, discloses a control mat made with fibers that have a diameter of 10 μm and a length of 0.5 inch, which length is outside applicant's claimed range of 6-12 mm. Applicant respectfully submits these separate disclosures cannot legitimately be combined, in light of col. 2, lines 24-26, which require the surface portion and the body portion to be different. The disclosure of fiber length at col. 5, lines 30-34 at best provides a wide range of fiber lengths, with the preferred ranges being much longer (preferably at least one inch, or 25.4 mm) than required by present claims 1, 27, and 32.

The Examiner has responded to applicant's argument as follows:

> Applicant argues that '697 does not teach the claimed fiber diameter and fiber length in combination. Examiner respectfully disagrees. Under 35 USC 103(a), the obviousness of an invention cannot be established by combining the teachings of the prior art references absent some teaching, suggestion, incentive, or predictability supporting the combination. A suggestion or motivation to combine references is an appropriate method fro determining obviousness, however it is just one of a number of valid rationales for doing so.
>
> [Office Action at p. 19.]

However, applicant respectfully submits that the third and following sentences in the foregoing quotation do not follow from, or support any contention made in the first two sentences that Jaffee '697 in fact does teach the claimed fiber diameter and fiber length in combination. A reference cannot properly be characterized as "teaching" a feature (here, a combined diameter and length) if there is not a specific disclosure recognizable to a skilled person that embodies each of the aspects of the feature. In the present instance, Jaffee '697 at best teaches a pertinent length for a surface portion of a two-layer structure and a diameter for a different portion of the structure. Consequently, there is no proper teaching of a single mat having both the claimed fiber diameter and length.

Moreover, sentence 3 and following do not clearly spell out the Examiner's contention, as seemingly he has argued multiple rationales for combining references to reach a conclusion of obviousness. While applicant agrees that there can be multiple rationales for combining references, it remains the law under *KSR* that the Examiner must identify and document what rationale for combining and modifying teachings of the prior art is present in order to sustain a rejection.

The Examiner has further contended that applicant has argued against the references individually, stating that:

> As set forth above, '697 is not relied on to teach the claimed fiber diameter and fiber length as Jaffee ['846] renders obvious each of the claimed fiber diameter and fiber length. Therefore, applicant's arguments are not commensurate in scope with the current rejection.
>
> [Office Action at p. 20.]

Applicant respectfully submits that this contention, that the '697 patent is not relied on to teach fiber diameter and length, is inconsistent with the previous quotation. Having specifically pointed to alleged teaching in the '697 patent of the very claim features in dispute, the Examiner cannot now consistently and properly maintain that he has not relied on the '697 patent for this feature, nor can he properly rebut applicant's argument directed to mischaracterization of the '697 patent as being merely an attack on the references individually. Furthermore, the Examiner's selectivity is submitted to violate the requirement of both *Graham* and *KSR* that the prior art be read "as a whole." *See also* MPEP 2141.02 (VI).

Clearly, nothing in the record establishes that the disclosure of the '697 patent in any way negates applicant's contention that the combination of fiber diameter and length recited by base claim 1, and ultimately inherited by dependent claim 13, is surprising and unexpected.Accordingly, reconsideration of the rejection of amended claim 13 under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of Jaffee '697 is respectfully requested.

Claim 20 stands rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of US Patent 6,365,533 to Horner, Jr., et al., which relates to a low fiber, plyable facer suitable for use in insulation board manufacture.

Applicant respectfully observes that the word "gypsum" occurs but once in Horner (col. 3, line 47). However, gypsum is disclosed as a filler useful in a surface coating. Nowhere does Horner in any way contemplate the gypsum board recited by applicant. Rather, Horner is directed exclusively to a "dry, preformed fibrous mat substrate on which is coated a pre-frothed or pre-foamed composition containing a natural or synthetic thixotropic latex polymer, a surfactant and an inorganic mineral filler." Col. 3, lines 3-6. The Examiner has not pointed to any disclosure in Horner that indicates that his facer, whether the preformed mat substrate precursor or the facer after being coated with pre-frothed or pre-foamed composition, has any pertinence to gypsum board manufacture. Thus, applicant maintains that Horner, like Jaffee '846, fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a surface that smooth enough to be directly paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material.

It is respectfully submitted that the Examiner has failed to provide a proper motivation for combining Horner with Jaffee '846. The mere use of the term "facer" by Horner is insufficient to establish that any facer suitable for Horner's board, which clearly is not a gypsum or other hydraulic set board, is alternatively suitable for a gypsum board. Nothing in

the present rejection establishes that what may be conventional for the foamed core insulation boards contemplated by Horner is, any way, conventional for the present gypsum board.

Applicant further maintains that having failed to recognize the conditions required to provide a paintable surface gypsum board, Jaffee '846 fails to teach the invention recited by claim 20. The Examiner has countered that Horner is not relied on for disclosure of a paintable facer. Rather, the Examiner appears to rely on Horner only for its disclosure of Kraft paper as a facer material, albeit not for gypsum board.

However, Jaffee '846's shortcoming goes far beyond the mere lack of disclosure of a second facer comprising Kraft paper. The structural and functional distinctions between Jaffee's board and the board defined by applicant's claims are set forth hereinabove in connection with the 103(a) rejection of claims 1-6, 8-15, 17-19, 21-24, 26-27, and 29-32 over Jaffee. Clearly, Horner, Jr., et al. does not recognize paintability, and also does not disclose or suggest an average fiber diameter ranging from about 9.5 to 12.5 μm. In this respect the Horner, Jr. et al. teaching does not appreciably add to the Jaffee teaching, and cannot be combined therewith to render obvious the board called for by applicant's claims. Inasmuch as Horner, Jr. et al. does not cure the aforementioned deficiencies of Jaffee, its combination therewith does not render obvious the invention of claim 20.

For these reasons, and those set forth above, it is submitted that the proposed combination of Jaffee '846 and Horner, Jr., et al. does not disclose or suggest the gypsum board recited by present claim 20.

Accordingly, reconsideration of the rejection of claim 20 under 35 U.S.C. 103(a) as being obvious over the combination of Jaffee '846 and Horner, Jr., et al. is respectfully requested.

Claim 25 was rejected under 35 USC 103(a) as being unpatentable over Jaffee '846 in view of US Patent 7,056,582 to Carbo, which discloses acoustical tiles, also known as acoustical panels, ceiling tiles, or ceiling panels, that are said to inhibit the growth of fungus, bacterial and other micro-organism.

Applicant respectfully maintains that Carbo, like Jaffee '846, fails even to recognize the possibility of a gypsum or like construction board that is faced with a non-woven, glass-fiber mat, yet has a surface that smooth enough to be directly paintable without the need for extensive surface preparation, such as the supplemental application of a skim coat of plaster or similar material.

For at least the reasons set forth hereinabove, it is submitted that Jaffee '846 fails to disclose or suggest the claimed invention. Clearly, Carbo, whether taken singly or in combination with Jaffee '846, does not remedy the lack of disclosure or suggestion of a mat imparting direct paintability to the gypsum board made with the present mat, as delineated by amended claim 1, on which claim 25 depends.

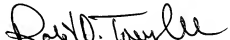
Accordingly, reconsideration of the rejection of claim 25 under 35 U.S.C. 103(a) as being obvious over the combination of Jaffee '846 and Carbo is respectfully requested.

## IV. Conclusion:

In view of the amendment of claims 1, 27, 31, and 32, the cancellation of claims 28-30, and the foregoing remarks, it is respectfully submitted that the present application has been placed in allowable condition. Reconsideration of the rejection of claims 1-6, 8-15, 17-27, and 29-32, entry of the present amendment, and allowance of the present application, as delineated by amended claims 1-6, 8-15, 17-27, and 31-32, are, therefore, earnestly solicited.

Respectfully submitted,

Alan M. Jaffee

By 

Robert D. Touslee
(His Attorney)
Reg. No. 34,032
Customer No. 29602